

IOWA STATE COLLEGE

JOURNAL OF SCIENCE

A Quarterly of Research



CONTENTS

31

VOLUME 30

1956 - 1957

PUBLISHED BY
THE IOWA STATE COLLEGE PRESS
PRESS BUILDING
AMES, IOWA

IOWA STATE COLLEGE

JOURNAL OF SCIENCE

Published August, November, February, and May

EDITOR-IN-CHIEF R. E. Buchanan
BUSINESS MANAGER Marshall Townsend

Published under the joint auspices of the graduate faculty of Iowa State College and the local chapter of Sigma Xi. The administrative board for the academic year 1956-57 includes:

REPRESENTING THE GRADUATE FACULTY

E. A. Benbrook, Department of Veterinary Pathology; F. E. Brown, Department of Chemistry; Hester Chadderdon, Department of Home Economics Education; E. S. Haber, Department of Horticulture; H. M. Harris, Department of Zoology and Entomology; R. M. Hixon, Dean of the Graduate College (and Chairman of the Administrative Board); R. W. Orr, The Library; H. J. Stoever, Department of Mechanical Engineering.

REPRESENTING SIGMA XI

O. E. Tauner, Department of Zoology and Entomology; C. H. Werkman, Department of Bacteriology.

Manuscripts should be submitted to R. E. Buchanan, 316 Curtiss Hall, Iowa State College, Ames, Iowa.

All matters pertaining to subscriptions, remittance, etc., should be addressed to the Iowa State College Press, Press Building, Ames, Iowa. Subscriptions are as follows: Annual: \$6.00 (in Canada \$6.50; other foreign countries \$7.00); single copies: \$2.00 (except No. 3 in each volume \$3.00).

Entered as second-class matter January 16, 1935, at the post office at Ames, Iowa, under the act of March 3, 1879.

TABLE OF CONTENTS

Vol. 31, No. 1, August, 1956

Diffusion coefficients of vitamins B ₁₂ and B _{12a} .	
BRUNO JASELSKIS, JOSEPH F. FOSTER, and HARVEY DIEHL	1
Histology of the maize plant in relation to susceptibility to the	
European corn borer.	MAX E. BELL 9
Effects of differential testosterone propionate levels on rat	
accessory gland activity. L.F. CAVAZOS and R.M. MELAMPY	19
Electrical conductance studies on an ion exchange resin.	
R.P. PURI, FREDERICK R. DUKE, and JUNE LOMNES	25
A study of mixed gas adsorption on mercury.	
ROBERT S. HANSEN and DORIS V. STAGE	33
Passage of cherry virus through <i>Prunus</i> root grafts.	
O.F. HOBART, JR.	49
Full sib and parent offspring correlations in symmetrical random	
mating populations with the frequency of the more favorable	
allele the same at all loci.	THEODORE W. HORNER 55
The components of variance in symmetrical random mating	
populations with the frequency of the more favorable	
allele the same at all loci.	THEODORE W. HORNER 67
Measurements of the unsporulated oocysts of <i>Eimeria acervulina</i> ,	
<i>E. maxima</i> , <i>E. tenella</i> , and <i>E. mitis</i> ; coccidian parasites of	
the common fowl.	E.R. BECKER 85

Vol. 31, No. 2, November, 1956

A revision of the Nearctic species of <i>Fungivora</i> (Meigen)	
(Diptera, Mycetophilidae).	JEAN L. LAFFOON 141

Vol. 31, No. 3, February, 1957

Abstracts of Doctoral Dissertations.	347
List of Masters' theses.	557
List of Staff Member Publications	567

Vol. 31, No. 4, May, 1957

A study of the number of doctorates conferred by American	
universities 1949-1953.	RAYMOND M. HUGHES 609
Iowa Ascomycetes II. Diaporthaceae : Valseae.	
JOSEPH C. GILMAN, L.H. TIFFANY, and R.M. LEWIS	623
Seed characters of selected plant families.	
DAVID S. MC CLURE	649
Author and Subject Indices.	683

